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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,327

11/26/2003

Richard L. Cohen

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11/17/2005

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EXAMINER

BAUER, SCOTT ALLEN

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/723,327

Applicant(s)

COHEN, RICHARD L.

Examiner

Scott Bauer

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2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Drawings*

1. Figures 1 & 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the circuit board of maximum trace width of Claims 3-5 & 13-15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. The drawings must further show the 1-2 inch length of 16-12 gauge wire of Claims 6 & 7 and the 1-2 inch length of from 18-10 gauge wire of Claims 16 & 17.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities: The applicant makes no reference to figures 4 & 5 in the disclosure. To the best of the examiner's understanding, the word "fig 1" in paragraph 0046 should be changed to read --fig. 4-- and the word "fig 2" in paragraph 0046 should be changed to read --fig. 5--.

Appropriate correction is required.

***Claim Objections***

4. Claims 3-7 & 13-17 are objected to as the claim(s) contain subject matter that was not supported by the specification.

Claims 3, 4, 5, 13, 14, & 15 recite that the loop antenna is on a printed circuit board with a maximized trace width. However, the specification never discloses the use of a printed circuit board.

Claims 6 & 7 recite the use of 16-12 gauge wire to be used as a ground interconnection and to form part of the impulse protection circuit. However, the specification never discloses the use of 16-12 gauge wire.

Claims 16 & 17 recite the use of 18-10 gauge wire to be used as a ground interconnection and to form part of the impulse protection circuit. However, the specification never discloses the use of 18-10 gauge wire.

5. Claims 3-5 & 13-15 are objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of the phrase "maximum trace width" is vague in that it does not adequately specify the limitation of the claimed trace width, and the limitation is not defined in the specification.

6. Claims 4 & 5 are further objected to because of the following informalities: Line 2 should be changed from: "the heavy ground is for the one" to read: --the heavy ground for the one--.

7. Claims 10 & 20 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 10 does not further limit Claim 9, from which it depends, nor does Claim 20 further limit Claim 19, from which it depends. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

8. Claim 14 is further objected to because of the following informalities: Line 1 of Claim 14 recites "The impulse circuit of claim 1". As best understood by the examiner, this should be changed to read --The impulse circuit of Claim 11--. At present, Claim 14 is a duplication of Claim 4. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-7 & 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stapelfeld et al. (US 6,360,698) in view of Luu. (US 5,625,521).

11. With regard to Claims 1, 2, 11 & 12, Stapelfeld, in Figure 2, teaches an electronic impulse circuit for an animal control system having a power circuit (120), and a transmitter having two outputs (122) to a loop antenna having two inputs (column 1 lines 16-21). The circuit taught by Stapelfeld also teaches a loop impulse protection circuit (128) interconnecting one input of the loop antenna to the antenna ground together with a heavy ground interconnecting the power circuit ground and the loop antenna ground (column 3 lines 57-63). Figure 3 depicts the "heavy" ground taught by Stapelfeld. The figure shows the surge protector (105) and transmitter, grounded by a grounding wire (107) (column 4 lines 23-25). Figure 3 also demonstrates that the grounding wire (107) is a physical connection to "earth ground". Stapelfeld further discloses that the output of the transmitter circuitry of Figure 2 is connected to power ground through the impulse protection circuit.

Stapelfeld et al. does not teach that the power circuit contains a line, neutral and ground, or a power impulse protection circuit interconnecting power circuit line and neutral to power circuit ground.

Luu, in Figure 9, teaches a surge protection circuit for protecting against voltage surges when lightning strikes an antenna (column 7 lines 52-54). The surge protection circuit contains a line (240), neutral (242) and ground (244) line protected by a power impulse protection circuit (246, 248 & 250).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stapelfeld et al. with Luu by protecting the power circuit of Stapelfeld with the metal oxide varistors (MOV'S) taught by Luu for

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the purpose of protecting the animal control system from transient voltage surges found on a common household outlet (Luu column 1 lines 10-15). In the circuit taught by Stapelfeld et al. in view of Luu, the MOV's would be placed inside the power converter (109) located in Stapelfeld's figure 3, prior to the power being converter from AC to DC.

12. With regard to Claims 3-5 & 13-15, Stapelfeld et al. in view of Luu discloses the impulse circuit of Claim 1 & 11. Stapelfeld et al. further discloses that an antenna coil is mounted on a circuit board on which is also mounted associated capacitors (column 5, lines 66 & 67 and column 6 lines 1-4). Stapelfeld in Figure 2, further discloses that the heavy ground is connected to the one input of the loop antenna.

Stapelfeld et al. in view of Luu does not disclose that the impulse protection circuit for the antenna or the heavy ground are mounted on the circuit board nor does Stapelfeld disclose that the circuit board has a maximum trace width for impulse protection.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to place the protection circuitry and heavy ground on a circuit board to provide a support region for mounting and interconnecting the protection circuitry and heavy ground, and to provide the board with as large of traces as possible because it was known in the art at the time the invention was made, that larger traces can withstand higher voltages and currents than smaller traces. A printed circuit board would inherently provide traces large enough to withstand operating currents and voltages for the circuit board to be functional.



13. With regard to Claims 6, 7, 16 & 17, Stapelfeld et al. in view of Luu teaches the impulse circuit of Claim 3 & 13 wherein the impulse protection circuit and heavy ground (107) are connected by wires.

Stapelfeld in view Luu does not disclose that the wire that forms part of the impulse protection circuit or the heavy ground interconnection to one input of the loop antenna, is a 1-2 inch length of 16-12 gauge wire. Stapelfeld further does not disclose that the impulse protection circuit or ground interconnection comprises a 1-2 length of 18-10 gauge wire.

However, it has been decided that, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation" In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to use a large gauge of wire for the protection circuitry since it was known in the art at the time the invention was made, that larger gauge wire could withstand higher voltages and currents than smaller wires. Lightning protection circuitry would inherently provide wire thick enough to withstand the high currents and voltages that the circuit is designed to dissipate.

14. Claims 8-10 & 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stapelfeld et al. in view of Luu and further in view of Dix Jr. (US 4,996,945).

15. With regard to Claim 8 & 18, Stapelfeld et al. in view of Luu discloses the impulse protection circuit of Claim 1 & 11. Stapelfeld further discloses in Figure 2, that the one input of the loop antenna includes a back-to-back diode surge arrestor (128) bridging the one input of the loop antenna to heavy ground. (column 3, lines 57-63).

Stapelfeld et al. in view of Luu does not disclose that a gas tube surge arrestor is used to bridge the antenna input with heavy ground.

Dix Jr., in Figure 2, discloses an electronic animal control system that uses both back to back Zener diodes (55) and a gas tube (63) as threshold voltage conduction. Both devices shunt power to ground in the event of a voltage surge. (column 5 lines 10-11 and lines 51-54).

Stapelfeld et al. in view of Luu discloses the claimed invention except that the impulse protection device is a back-to-back Zener diode instead of a gas tube. Dix Jr. shows that a gas tube is an equivalent structure known in the art. Therefore, because the two surge arrestors were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the gas tube for the back to back Zener diode for the purpose of preventing leakage current from escaping through the diodes.

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16. With regard to Claims 9, 10, 19 & 20, Stapelfeld in view of Luu and further in view of Dix Jr. teach the impulse circuit of Claim 8. Stapelfeld et al., in Figure 2, further teaches that the impulse protection circuit of the transmitter output includes a resistance (470) to the gas tube.

### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bauer whose telephone number is 571-272-5986. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAB



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PRIMARY EXAMINER